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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/556,643

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Jurgen Gieshoff

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EXAMINER

NGUYEN, TU MINH

ART UNIT

PAPER NUMBER

3748

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/556,643	<b>Applicant(s)</b> GIESHOFF ET AL.	
	<b>Examiner</b> TU M. NGUYEN	<b>Art Unit</b> 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. An Applicant's Request for Continued Examination (RCE) filed on November 6, 2009 has been entered. Per instruction from the RCE, an enclosed Applicant's Amendment has been entered. Claim 1 has been amended. Overall, claims 1-3 and 5-7 are pending in this application.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**3. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirota et al. (U.S. Patent 6,367,246) in view of Deeba (U.S. Patent 6,912,847).**

Re claim 1, as shown in Figures 1-2, Hirota et al. disclose an exhaust-gas purification system for the exhaust gases of an internal combustion engine (diesel engine) of a motor-vehicle comprising a particulate filter (18), wherein a hydrocarbon adsorber (63a) having platinum on the hydrocarbon adsorber (see lines 14-28 of column 4); and the hydrocarbon adsorber is arranged closely upstream of the particulate filter (18, 60) in the under-floor area of the motor vehicle and wherein (i) the particulate filter is a wall flow filter (as clearly shown in Figure 2), which is coated with an oxidation catalyst (platinum on the hydrocarbon adsorber) on an entry

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side thereof and (ii) the hydrocarbon adsorber and the wall flow filter are both disposed in one converter housing (19).

Hirota et al., however, fail to disclose that the system further comprises a converter shell arranged in the exhaust-gas system closely downstream of the engine outlet and includes an oxidation catalyst; and that a concentration of platinum on the hydrocarbon adsorber is up to 1 g/L of a filter honeycomb body volume.

As shown in Figure 3, Deeba discloses a diesel engine system comprising a soot filter and low temperature NO<sub>x</sub> trap, comprising a canister (11) having a carrier (14) coated with a NO<sub>x</sub> trap material and a soot filter (15); wherein the NO<sub>x</sub> trap material is adapted to trap HC at low temperature (see lines 39-60 of column 6). As indicated on lines 15-23 of column 9, Deeba teaches that it is conventional in the art to include a converter shell (16) arranged in an exhaust-gas system closely downstream of an engine outlet and includes an oxidation catalyst (12) such that the oxidation catalyst is adapted to convert NO in an exhaust gas stream into NO<sub>2</sub> to ensure adequate combustion of soot deposited on the soot filter downstream. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the oxidation catalyst taught by Deeba in the system of Hirota et al., since the use thereof would have been routinely practiced by those with ordinary skill in the art to increase a purification efficiency of the particulate filter in Hirota et al.

Hirota et al. disclose the claimed invention except for specifying that an optimum range of the concentration of platinum on the hydrocarbon adsorber is up to 1 g/L of the filter honeycomb body volume. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum range of the concentration of

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platinum on the hydrocarbon adsorber, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claim 2, in the modified system of Hirota et al., a zeolitic coating on a honeycomb body is used as the hydrocarbon adsorber, which includes a mixture of the zeolites ZSM-5, DAY (see lines 26-28 of column 4) and comprises platinum at a concentration of 0.1g/L of honeycomb body volume as a catalytically active component.

Re claim 3, in the modified system of Hirota et al., the oxidation catalyst includes a catalytically active coating of platinum-activated aluminum oxide or aluminum silicate on a honeycomb body (see line 59 of column 8 to line 14 of column 9 in Deeba).

Re claim 5, the modified system of Hirota et al. discloses the invention as cited above, however, fails to disclose that the hydrocarbon adsorber comprises a storage capacity for hydrocarbons in the range between 1 and 50 g.

Hirota et al. disclose the claimed invention except for specifying that an optimum range of the hydrocarbon adsorber storage capacity is between 1 and 50 g. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum range of the hydrocarbon adsorber storage capacity, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claim 6, Hirota et al. further disclose a method of operating the exhaust-gas purification system, wherein during operating phases of the engine with exhaust-gas temperatures at the engine outlet below 200°C, the hydrocarbons emitted by the engine and not

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converted by the oxidation catalyst are adsorbed at the hydrocarbon adsorber and the emitted soot particles are deposited on the particulate filter, while during operating phases of the engine with exhaust-gas temperatures at the engine outlet of more than 200°C, the emitted hydrocarbons are converted by the oxidation catalyst (see lines 7-43 of column 5), and the particulate filter is regenerated from time to time, wherein for initiating the regeneration, the exhaust-gas temperature is raised by engine modifications at the site of the hydrocarbon adsorber above the desorption temperature of the hydrocarbons and the stored hydrocarbons are desorbed and catalytically burned at the oxidation coating of the particulate filter to support the regeneration (see lines 44-67 of column 5).

Re claim 7, in the method of Hirota et al., the concentration of hydrocarbons in the exhaust gas is raised by post-injecting hydrocarbons into the cylinders of the internal combustion engine during the storage phases in order to increase the mass of stored hydrocarbons (see lines 26-50 of column 8).

#### ***Prior Art***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of three patents: Maaseidvaag et al. (U.S. Patent 6,167,696), Nakagawa et al. (U.S. Patent 6,782,694), and Szymkowicz (U.S. Patent 6,915,629) further disclose a state of the art.

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*Communication*

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tu M. Nguyen/

TMN

Tu M. Nguyen

February 15, 2010

Primary Examiner

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